```
Ø
m
m
1
må
```

```
SEQUENCE LISTING
   <110> Bayer AG
   <120> Plant phosphomevalonate kinases
   <130> Le A 35 018
   <140>
   <141>
   <160> 5
   <170> PatentIn Ver. 2.1
   <210> 1
   <211> 2396
   <212> DNA
   <213> Arabidopsis thaliana
  <220>
  <221> CDS
  <222> (685)..(2199)
  gtcgacccac gcgtccgggc cgaccttctt cttcttcctt aagacaacac ataatgatag 60
aagcaaactg gggaagatga agatggagtg gtgaagaaca aaaccgtata accgttcggt 120
  tcagaggtgc cgaaccgaac cgacccgtaa accgaaatcc tcaaaagaaa ttgccgatcg 180
  gtttctcggt ttcttccgaa ctcccaggcc tagtttggtt ttatttttca cgagttttgc 300
  ttetetttte ateggegaeg acgaegtega gtttetgtea aaaegttaae gateegaete 360
  gagegtegae agtaagagaa gaagacageg attgtgtgta gategaegge gaaegtgtgt 420
  cgatccgtct cgatcgacgg agaatacgtt tcgatccggt ttcgatccaa atcggagagt 480
  ttgaggatct aaatcggaaa ttgcattaat actcatctcc aatctcttct gaagagtccg 540
  aatccgatct accaccacta ctcgtaccgc cggtcattta ctgccgccga tttcaaatta 600
  tecgateatt teeggegata tecaategea gaetgaggtg aatetggggt tttgateage 660
  gattatettt gteactettt gaaa atg get gtt gtt get tet get eet ggg
                            Met Ala Val Val Ala Ser Ala Pro Gly
  aaa gtt ttg atg act gga ggc tac ctt gta ctc gag aag cca aat gca
  Lys Val Leu Met Thr Gly Gly Tyr Leu Val Leu Glu Lys Pro Asn Ala
  ggg ctt gtg ttg agt aca aat gca cgg ttt tac gcg att gtg aag cca
                                                                 807
  Gly Leu Val Leu Ser Thr Asn Ala Arg Phe Tyr Ala Ile Val Lys Pro
  atc aac gaa gaa gtc aag cct gaa agt tgg gca tgg aaa tgg aca gat
  Ile Asn Glu Glu Val Lys Pro Glu Ser Trp Ala Trp Lys Trp Thr Asp
              45
```

DUDENSON. LINES.

							ctc Leu 65									903
							cag Gln									951
							ata Ile									999
ttg Leu	gca Ala	acc Thr	gag Glu	aag Lys 110	gac Asp	aaa Lys	gaa Glu	tca Ser	ttg Leu 115	cac His	aaa Lys	ctc Leu	tta Leu	ttg Leu 120	caa Gln	1047
							ggc Gly									1095
aac Asn	cag Gln	ata Ile 140	gaa Glu	tcg Ser	gct Ala	Gly ggg	ctt Leu 145	cca Pro	ttg Leu	aca Thr	cca Pro	gaa Glu 150	tcg Ser	ctg Leu	ggt Gly	1143
							atc Ile									1191
ggt Gly 170	gct Ala	aat Asn	tcc Ser	aag Lys	cct Pro 175	gaa Glu	gta Val	gca Ala	aaa Lys	act Thr 180	ggc Gly	tta Leu	ggt Gly	tct Ser	tct Ser 185	1239
gca Ala	gca Ala	atg Met	aca Thr	aca Thr 190	gct Ala	gtg Val	gtt Val	gca Ala	gct Ala 195	ctg Leu	tta Leu	cat His	tat Tyr	ctt Leu 200	gga Gly	1287
							tgt Cys									1335
							ata Ile 225									1383
							ttt Phe									1431
							tct Ser									1479
							tta Leu									1527
							aga Arg									1575
2+4		04.5	++-	~	~~~					~	~~~					1 ( ) 2

atg aat ctt ttc ctt gga gaa cct gga agt ggt gga tcc tcc aca cca 1623

Met	Asn	Leu 300	Phe	Leu	Gly	Glu	Pro 305	Gly	Ser	Gly	Gly	Ser 310	Ser	Thr	Pro		
														gag Glu		1671	
														ctg Leu		1719	
														gat Asp 360		1767	
														aag Lys		1815	
														gaa Glu		1863	
														cgt Arg		1911	
														act Thr		1959	
														ggt Gly 440		2007	
														ggg Gly		2055	
														ttg Leu		2103	
														ggt Gly		2151	
														ctt Leu		2199	
taaa	aaacaacat tgtttcagtg tecaattatt aggtgegtea ecaagttegg ttgagtata											tatac	2259				
tgtt	ttttgcat atagacttgg gtgctaaatt tcttggtgta agcattttta tacccattgt											attgt	2319				
aagg	gtctt	ta a	ta actottggaa aacttgoggg aaaataaaat aaagttgatt toaaatotto									tette	2379				
tcaa	aaaa	aa a	aaaa	aa												2396	

<210> 2 <211> 505

DITATE A SESSEED

<212> PRT <213> Arabidopsis thaliana

<400> 2

Met Ala Val Val Ala Ser Ala Pro Gly Lys Val Leu Met Thr Gly Gly 1 5 10 15

Tyr Leu Val Leu Glu Lys Pro Asn Ala Gly Leu Val Leu Ser Thr Asn  $20 \\ 25 \\ 30$ 

Ala Arg Phe Tyr Ala Ile Val Lys Pro Ile Asn Glu Glu Val Lys Pro 35 40 45

Glu Ser Trp Ala Trp Lys Trp Thr Asp Val Lys Leu Thr Ser Pro Gln 50 60

Leu Ser Arg Glu Ser Met Tyr Lys Leu Ser Leu Asn His Leu Thr Leu 65 70 80

Gin Ser Val Ser Ala Ser Asp Ser Arg Asn Pro Phe Val Glu His Ala 85 90 95

] Ile Gln Tyr Ala Ile Ala Ala Ala His Leu Ala Thr Glu Lys Asp Lys 100 105 110

Glu Ser Leu His Lys Leu Leu Leu Gln Gly Leu Asp Ile Thr Ile Leu 115 120 125

Ud Gly Ser Asn Asp Phe Tyr Ser Tyr Arg Asn Gln Ile Glu Ser Ala Gly a 130 140

Leu Pro Leu Thr Pro Glu Ser Leu Gly Thr Leu Ala Pro Phe Ala Ser 145 155 150 155

□ Ile Thr Phe Asn Ala Ala Glu Ser Asn Gly Ala Asn Ser Lys Pro Glu
 □ 165 170 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 175

 □ 17

Val Ala Lys Thr Gly Leu Gly Ser Ser Ala Ala Met Thr Thr Ala Val 180 180

Val Ala Ala Leu Leu His Tyr Leu Gly Val Val Asp Leu Ser Asp Pro 200 205 206

Cys Lys Glu Gly Lys Phe Gly Cys Ser Asp Leu Asp Val Ile His Met 210 225

Ile Ala Gln Thr Ser His Cys Leu Ala Gln Gly Lys Val Gly Ser Gly 225 230 235 240

Phe Asp Val Ser Cys Ala Val Tyr Gly Ser Gln Arg Tyr Val Arg Phe  $245 \hspace{1cm} 250 \hspace{1cm} 255$ 

Ser Pro Glu Val Leu Ser Phe Ala Gln Val Ala Val Thr Gly Leu Pro  $260 \hspace{1cm} 265 \hspace{1cm} 265 \hspace{1cm} 270 \hspace{1cm}$ 

Leu Asn Glu Val Ile Gly Thr Ile Leu Lys Gly Lys Trp Asp Asn Lys 275 280 285

Arg Thr Glu Phe Ser Leu Pro Pro Leu Met Asn Leu Phe Leu Gly Glu 290 295 300

Pro Gly Ser Gly Gly Ser Ser Thr Pro Ser Met Val Gly Ala Val Lys

vÖ.

jas.

```
305
                      310
                                           315
                                                               320
  Lys Trp Gln Met Ser Asp Pro Glu Lys Ala Arg Glu Asn Trp Gln Asn
  Leu Ser Asp Ala Asn Leu Glu Leu Glu Thr Lys Leu Asn Asp Leu Ser
  Lys Leu Ala Lys Asp His Trp Asp Val Tyr Leu Arg Val Ile Lys Ser
  Cys Ser Val Leu Thr Ser Glu Lys Trp Val Leu His Ala Thr Glu Pro
  Ile Asn Glu Ala Ile Ile Lys Glu Leu Leu Glu Ala Arg Glu Ala Met
  Leu Arg Ile Arg Ile Leu Met Arg Gln Met Gly Glu Ala Ala Ser Val
 Pro Ile Glu Pro Glu Ser Gln Thr Gln Leu Leu Asp Ser Thr Met Ser
                                  425
 Ala Glu Gly Val Leu Leu Ala Gly Val Pro Gly Ala Gly Gly Phe Asp
MAla Ile Phe Ala Ile Thr Leu Gly Asp Ser Gly Thr Lys Leu Thr Gln
 Ala Trp Ser Ser His Asn Val Leu Ala Leu Leu Val Arg Glu Asp Pro
THIS Gly Val Cys Leu Glu Ser Gly Asp Pro Arg Thr Thr Cys Ile Thr
                  485
                                      490
Ser Gly Val Ser Ser Ile His Leu Glu
              500
 <210> 3
 <211> 611
 <212> DNA
 <213> Medicago truncatula
 <400> 3
 ctgttatctg agttgaagaa atatcacaat atcaatggcc gtggtggttg cttctgctcc 60
 tgggaaggtg ttaatgaccg gtggctacct agttttagag agacctaatg ctggacttgt 120
 tottagtact aatgetegtt titatgetat tgtcaaacca atctateete aaactaaace 180
 tgattettgg gettgggett ggteagatgt eagattaaca teteetcaac teteeagaga 240
 agcettetat aaattageae teaaaaatet taceateeaa aetgttteet caagtgaaae 300
 aaggaaccct tttgtggaat atgctgtgca atactccgtg gctgccgcct atgcaacagc 360
 tgaccagaat aaaaaggact tgttgcacaa actacttttg caaggtcttg acattacaat 420
 tttgggttcc aatgattttt attcttatag gaatgagatt gagagacacg gactcccttt 480
 gacatcagaa teattggeea eeetteegee ttttgeetee atttettea atactgatga 540
 tgctaatgga aggaattgta agcctgaaat tgccaaaact ggtttgggct catctgcagc 600
 aatgacaacc g
                                                                    611
 <210> 4
 <211> 728
 <212> DNA
```

- 6 -

## <213> Gossypium hirsutum

```
<440> 4
cquarter of the control of the co
```

Free

Cacaggogaa accototoot gotgotoacg gttgataaac cotoaatatt tgoggtaggg 60
Cacaggogaa accototoot gotgotoacg gttgataaac cotoaatatt tgoggtaggg 60
Cotoagatti actgoaactt gocagtaaga gtcogtigtg goggaagaga gotgocgaga 120
Cotoagatti actgoaacte gotgaagaca cattogacac attatagagaa ggggttgat agattootgg 180
Lotaggaaaa ctgacaataa ggtgaaaaaa acataatta cottoagatt atotgatoat 180
Cotoagaagac caaatcaagg actgotogga aaggttttaa taacaggagc ttatotaatt 300
Cotoagaagac caaatcaagg actgotgot aaggttttaa taacaggagc ttatotaatt 300
Lotagaagac caaatcacagg actgotgot acaccacacg otcoottot cocattog 180
Lotagaacatgc ggactagcac agattocagt agttgggaat ggctatggac agatgtgaaa 420
Lotagaaatg ttgottooto aagtagcaat agtaatcoot ttggggaaca agcagtgcaa 540
Lotagaaatg ttgotooto aagatgcaat ggtaatcoot ttggggaaca agcagtgcaa 571
Lotagaacatg cagctgcaaa agaagccoott g